

INTRODUCTION

The last embers of summer crackle away outside as I write this update for the CMIC. It has been an eventful year so far for the Center. We have crested the mid-point of the Phase 1 award and are building momentum towards the next phase.

An update to the COBRE parent announcement (PAR-27-055) from NIGMS has shaken up the terminology and (more importantly) the logistics of who can apply for a COBRE award and when. COBRE Principal Investigators and other UAMS leadership are staying in touch with NIH Programmatic Staff to be sure we're firing on all cylinders going forward with what has become a critical mechanism for building research capacity in Arkansas and other IDeA states. Exciting times!

As we finish off the summer months and welcome new students, I hope this newsletter reminds everyone how much good we've accomplished and how much more we can do together.

Cheers,



Robert L. Eoff, Ph.D.
Professor & Vice Chair of
Biochemistry & Molecular Biology
CMIC Director



OUR MISSION

Cancer affects the health of millions of Americans. Studying molecular mechanisms that endow cells with malignant properties is an essential component of advancing pre-clinical studies and a key part of efforts to improve patient outcomes. The purpose of this NIH COBRE grant is to establish the CMIC at the UAMS. The mission of the CMIC is to study molecular features and functional properties of biomolecules that drive cancer. The unifying theme of research among Center members is the coupling of structural biology and high-resolution imaging with precise, quantitative analysis of biochemical and cellular processes to understand how molecular interactions govern the initiation, progression and treatment of cancer. Our long-term goal is to leverage faculty mentoring, strategic recruitment, and cutting-edge core resources to develop a critical mass of investigators that will support a self-sustaining center in which research advances our knowledge of cancer through precise and comprehensive analyses of molecular events that impact malignant pathogenesis.

PLEASE CITE Grant P20 GM152281 if you receive COBRE support or use CMIC core services/instrumentation.

CENTER NEWS & UPDATES

• **CMIC welcomes Tamer Kaoud, Ph.D., as our newest Research Project Leader (RPL).** A hardy welcome to Tamer Kaoud, Ph.D., who joins us as the newest CMIC RPL. Dr. Kaoud is an Assistant Professor in the Department of Pharmaceutical Sciences at UAMS.



His research program bridges structural and biochemical approaches to study enzymes with cellular models of cancer, especially dysregulated signaling mechanisms in breast cancer. Dr. Kaoud's COBRE project is entitled "Phosphorylation-gated TRPM7 channel-kinase coupling regulates EMT in cancer". We are thrilled to have Dr. Kaoud officially join the CMIC as our newest RPL. Welcome Tamer!

• **CMIC Spring Advisory Committee (AC) Meeting March 20th.** The CMIC and Arkansas in general had great representation at the 10th Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE), which was held June 14-17 in Rockville, Maryland.



There were 4 posters from CMIC-supported labs, 1 talk, 2 CMIC Research Core posters, and CMIC investigators served on 2 panels at NISBRE.

• **New CMIC Pilot Project Leaders.** Congratulations to the newest CMIC Pilot Project awardees, Kyoungyun Kim, Ph.D. (UAMS, Pharmacology and Toxicology) and Mulu Tesfey, Ph.D. (UAMS, Pathology). These \$75K awards are for 1-year and are supported by funds from the UAMS College of Medicine. Welcome to the CMIC team Drs. Kim and Tesfay!

• **New grants for CMIC RPLs, PPLs, and Pipeline Investigators.** Congratulations to CMIC investigators Drs. Alicia Byrd (former PPL; 1 R01GM165736-01, \$1.4M total), Joonas Jansen (former RPL; 1 R35GM165917-01, \$2.1M total), and Angela Odle (Pipeline Investigator; 1R01HD 118024-01A1, \$2.6M total). Each of these CMIC-affiliated investigators received new RPG-level awards from the NIH. Congratulations to all!

CENTER NEWS & UPDATES (CONTINUED)

• **CMIC welcomes Graham Heberlig, Ph.D., as the Structural Biology Core (SBC) Manager.** The CMIC is excited to welcome our new SBC Manager, Dr. Graham Heberlig (pictured to the right). Dr. Heberlig received his Ph.D. in Chemistry from the University of Ottawa. He comes to us direct from San Diego, where he was a postdoctoral fellow in the laboratory of Professor Michael D. Burkart. While at UCSD, Dr. Heberlig studied carrier protein interactions in glycoside natural products. He brings extensive experience and scientific expertise in the application of cryo-EM and X-ray crystallographic methods to the CMIC. Dr. Heberlig is available to discuss potential project ideas involving structural biology. Welcome Graham!



• **The CMIC SBC is live in iLab.** As we build towards the next phase of the CMIC, the SBC has begun to adopt a fee-for-service model as a way to ensure the long-term sustainability of the core. Please use the QR code on the right or go directly to the CMIC SBC iLab landing site <https://uams.ilab.agilent.com/sc/4354/cmhc-structural-biology-core/?tab=about>. You can also contact us at CMIC@uams.edu for more information about rates and scheduling.

Scan the QR code to learn more about the CMIC SBC



RECENT PUBLICATIONS

(Center publications and publications citing the CMIC COBRE from March 2026 - September 2026)

de la Salud Bea R, Shen Q, Frawley E, Brint AA, Jenkins SV, **Dings RPM**, Alli C, Abhieyghan P. Synthesis of Peptide Analogs From Fish Venom With Potential Antimicrobial and Anticancer Activity. *Chem Biol Drug Des.* 2026 Jul;108(1):e70351. doi: 10.1111/cbdd.70351. PMID: 42364129.

Miah M, Huda MN, Islam MR, Gerald D, Khator S, Saha A, Alam J, Thornton JL, Gies A, Bauer MA, Stephens KE, Nagalo BM, **Rahman MA**, Washburn MP, **Miah S**. Loss of FAM60A disrupts Sin3/HDAC control of the Hippo signaling and promotes oncogenic YAP1 activation. *Cell Death Dis.* 2026 Apr 27;17(1):560. doi: 10.1038/s41419-026-08778-y. PMID: 42045174; PMCID: PMC13254352.

Islam MR, Nagar P, McNaughton N, Heeamoni SA, Hasan MM, Kandel S, Mukta IJ, Tsakiroglou P, Dalton WB, Abdel-Wahab O, Krainer AR, **Rahman MA**. Targeting EZH2 oncogenic splicing: decoding the regulatory network and antisense correction. *Genes Dev.* 2026 Aug 26;40(17-18):1508-1522. doi: 10.1101/gad.353628.126. PMID: 42547267; PMCID: PMC13474417.

Hossain M, Huang J, Su Y, Islam MR, **Rahman MA**, Cayabyab FS, Liu L. SUMOylation Protects Endothelial Cell-Expressed Leukocyte-Specific Protein 1 from Ubiquitination-Mediated Proteasomal Degradation and Facilitates Its Nuclear Export. *Int J Mol Sci.* 2026 Jan 22;27(2):1111. doi: 10.3390/ijms27021111. PMID: 41596753; PMCID: PMC12842081.

Ketkar A, Paxton BC, Zuniga OE, Sewilam RS, Morales M, Schaller J, McCollum RJ, Jackson KE, Lowran K, Paul A, Patel M, Seenivasan S, McCrury M, Al-Anbaky Q, Maddukuri L, **Kendrick S**, Wu CG, Gunderson JEC, **Eoff RL**. Human REV1 interacts with DHX36 to promote replication and tolerance of G-quadruplex DNA. *Nucleic Acids Res.* 2026 Jun 8;54(11):gkag562. doi: 10.1093/nar/gkag562. PMID: 42258547; PMCID: PMC13244153.

McCrury M, Sanchez A, Mangold R, Spears TJ, Doshier C, Buisson R, Miah M, Akdeniz D, **Kendrick S**. DNA secondary structures in BCL2 and MYC elicit activation-induced cytidine deaminase binding and activity. *Nucleic Acids Res.* 2026 Feb 24;54(5):gkag203. doi: 10.1093/nar/gkag203. PMID: 41830329; PMCID: PMC12988328.

Rasouli S, Myasnikov A, **Enemark EJ**. Archaeal and eukaryotic MCM rings sequentially melt DNA for replication initiation. *Nat Commun.* 2026 Mar 31;17(1):4681. doi: 10.1038/s41467-026-70961-8. PMID: 41916983; PMCID: PMC13201583.

Marecki JC, **Gao J**, **Raney KD**. Chapter 14: Unwinding quadruplex structures with RNA helicases. *Methods in Molecular Biology – RNA remodeling proteins.* 2026 3rd Edition, Springer Nature (in press September 2026).

THE STRUCTURE OF DETERMINATION

“When you’re going super-fast, there is only one line.”

- Matt Oxley, *HSL S10E2*

